UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,586	05/03/2001	Daniel M. Michaelson	01/21573	6527

7590 06/03/2004

G.E. EHRLICH (1995) LTD.
c/o ANTHONY CASTORINA
SUITE 207
2001 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202

EXAMINER	
WEGERT, SANDRA L	
ART UNIT	**PAPER NUMBER**
1647	

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/847,586	MICHAELSON, DANIEL M.	
	Examiner	Art Unit	
	Sandra Wegert	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-166* is/are pending in the application.

4a) Of the above claim(s) *4, 10-13, 23-54, 58, 59, 65-114, 121-123, 132, 137, 138 and 143-166* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-9,14-22,55-57,60-64,115-120,124-131,133-136 and 139* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 5/3/01 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Application, Amendments, and/or Claims

Applicant's election of Group I (Claims 1-22, 55-64 and 115-142) and SEQ ID NO: 77 in the Paper of 18 March 2004 is acknowledged. In addition, Applicant elected the following species: A) *NF-H*, B) a *Continuous* epitope, D) *Alzheimer's disease*, and E) *Phosphoserine*. Claims 4, 10-13, 23-54, 58, 59, 65-114, 121-123, 132, 137, 138 and 143-166 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected Inventions, there being no allowable generic or linking claim. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Informalities

Title

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: "METHOD FOR DIAGNOSING ALZHEIMER'S DISEASE USING PHOSPHORYLATED NEUROFILAMENT-H PROTEIN."

Appropriate correction is required.

Specification

The disclosure is objected to because of the following informalities:

Figures

Figure 6 is objected to because is not clear what process or methods are represented by the parts of the diagram, nor what there relationships are to each other. Any details that are essential for a proper understanding of the disclosed invention should be shown in the figure and/or described in the Description of the Drawings. MPEP § 608.02(d), and 702.01.

Appropriate correction is required.

Figure 7 is objected to because is not clear what the boxes represent or their relationships to each other. Any details that are essential for a proper understanding of the disclosed invention should be shown in the figure and/or described in the Description of the Drawings. MPEP § 608.02(d), and 702.01.

Appropriate correction is required.

Figure 8 is objected to because it is not clear what the nature of the apparatus is, the meaning of the shadings within each rectangle, nor what the arrangement of the blocks indicates. Any details that are essential for a proper understanding of the disclosed invention should be shown in the figure and/or described in the Description of the Drawings. MPEP § 608.02(d), and 702.01.

Appropriate correction is required.

Figure 9 is objected to because it is not clear what the nature of the apparatus is, the meaning of the shadings within each rectangle, nor what the arrangement of the blocks indicates. It is also not known how one produces the statistics shown from the antibody tests shown in the Specification. Any details that are essential for a proper understanding of the disclosed invention should be shown in the figure and/or described in the Description of the Drawings. MPEP §

608.02(d), and 702.01.

Appropriate correction is required.

Claims

Claims 1, 2, 9, 17, 56, 57, 116, 117, 120, 124, 125, 131, 136, 139, 140 and 141 are objected to because they recite or encompass non-elected inventions.

Claim 55 is objected to because it does not end with a period.

Appropriate correction is required.

Claim Rejections/Objections

Claim Rejections - 35 USC § 112, first paragraph, enablement.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> **The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.**

Claims 1-3, 5-9, 14-22, 55-57, 60-64, 115-120, 124-131, 133-136 and 139-142 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and or use the invention. The specification is not enabling for a method of identifying an existence, non-existence, type or state of a neurodegenerative disorder in an individual using the methods described. Claims 1-3, 5-9, 14-22, 55-57, 60-64, 115-120, 124-131, 133-136 and 139-14 are directed to methods of diagnosis of

a neurodegenerative disorder using antibodies against phosphorylated Neurofilament-H and other short peptides, and polypeptides comprising repeats of phosphorylated NF-H.

The specification teaches an algorithm for using phosphorylated NF-H and other epitopes in the detection of several neurodegenerative diseases. Examples are given wherein serum from patients who have dementia is combined with epitopes of phosphorylated peptides, presumably on a fixed substrate, and levels of positive staining are measured.

The disclosure is not enabling for detection of the existence, non-existence, type or state of a dementia such as Alzheimer's disease, using the phosphoserine-containing NF-H epitope or using combinations of epitopes. A detailed algorithm is referred to whereby mixtures of peptide epitopes are used in some way to detect and distinguish dementias. However, the methods are not described in sufficient detail to enable one skilled in the art to diagnose a neurodegenerative disorder. The specification is not enabling for a method of identifying an existence, non-existence, type or state of a neurodegenerative disorder in an individual using the methods described. Protocols for dilution of sera, immobilization of peptides, and blocking of "plates" are represented more clearly in the disclosure than are data demonstrating enablement of the invention. Figures 6-9 are both theoretical and poorly explained. For example, it is not explained what the connections between the blocks in Fig. 7 represent. Will the sera samples be passed from one structure to another structure, or does this figure represent an algorithm for interpretation of the data? Likewise, are the data in Fig. 8 theoretical, or derived from experiments? What does the arrangements of the blocks represent: are there four sera samples in each experiment? What do the size, darkness and position of the sample on the "slide" mean? Similarly, many terms in the data tables are undefined or unclear and are necessary for the

understanding of the invention. It is unclear what a "node" represents, or a "FACT", or what an "ideal" peptide profile is and how it is measured (Tables 4-6a), or how one knows to arrange the peptide profiles into "nodes" or "FACTS". How are values in the AD group that overlap widely with values in the NC group (Table 3) translated into clear-cut "AD nodes" or "FACTS"? In fact, how data like in Table 3 are translated into data used to generate Table 5a is not disclosed clearly at all.

Furthermore, the claims embrace methods which can be used to identify *any* neurodegenerative disorder that has an immunological component. However, despite the fact that the claimed methods are directed to methods of diagnosing a neurodegenerative disorder, the specification does not enable use of all antigenic peptides for diagnosis of any neurodegenerative disorder that involves antibody production. The state of the art is silent with respect to neurological disorders that are autoimmune, or that involve production of antibodies that are then secreted into blood. The Examiner is not provided with sufficient detail to envision use of the disclosed peptides to diagnose a neurodegenerative disorder.

Due to the large quantity of experimentation necessary: 1) to determine the concentrations, arrangements, and properties of the disclosed phosphorylated polypeptides, such that it can be determined how to use the claimed polypeptides in the apparatus indicated for detection of a neurodegenerative disease; 2) to determine if a positive diagnosis for neurodegenerative disease was obtained; 3) to overcome the lack of direction/guidance presented in the specification regarding above; and 4) to overcome the complex nature of the invention-undue experimentation would be required of the skilled artisan to make and/or use the claimed invention.

Claim Rejections - 35 USC § 112, second paragraph, indefiniteness.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> **The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.**

Claim 3 is rejected under 35 U.S.C. 112, -second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). Claim 3 recites a "continuous" epitope. It is not known what the term "continuous" means in this context.

Conclusion

Claims 1-3, 5-9, 14-22, 55-57, 60-64, 115-120, 124-131, 133-136 and 139-142 are rejected for the reasons cited above.

Advisory information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra Wegert whose telephone number is (571) 272-0895. The examiner can normally be reached Monday - Friday from 9:00 AM to 5:00 PM (Eastern Time). If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached at (571) 272-0887.

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth C. Kemmerer

SLW
25 May 2004

ELIZABETH KEMMERER
PRIMARY EXAMINER